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Korea develops healthcare device to track chronic diabetic wounds?

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Device could one day be used for monitoring inside the wound area as there is no need for removal

A group of scientists at Korea Advanced Institute of Science & Technology (KAIST) has developed digital healthcare technology that tracks the wound healing process in real time, which allows appropriate treatments to be administered.

In the case of diabetic patients, chronic wounds are easily formed due to complications in normal blood circulation and the wound healing process. In the United States alone, hundreds of billions of dollars of medical costs stem from regenerating the skin from such wounds.

The research team tracked the heating response within the wound by utilizing the differences in temperature between the damaged area and the surrounding healthy skin. They then measured heat transfer characteristics to observe moisture changes near the skin surface, ultimately establishing a basis for understanding the formation process of scar tissue. The team conducted experiments using diabetic mice models regarding the delay in wound healing under pathological conditions, and it was demonstrated that the collected data accurately tracks the wound healing process and the formation of scar tissue.

To minimise the tissue damage that may occur in the process of removing the tracking device after healing, the system integrates biodegradable sensor modules capable of natural decomposition within the body.

The research team plans to integrate antimicrobial materials into this device, aiming to expand its technological capabilities to enable the observation and prevention of inflammatory responses, bacterial infections, and other complications.